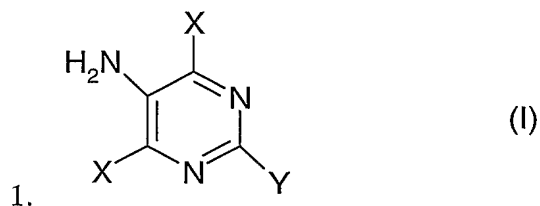


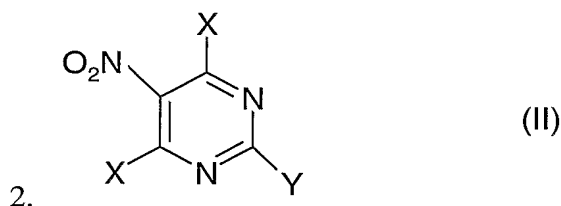
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CLAIMS

1. A process for the preparation of a compound of formula (I):



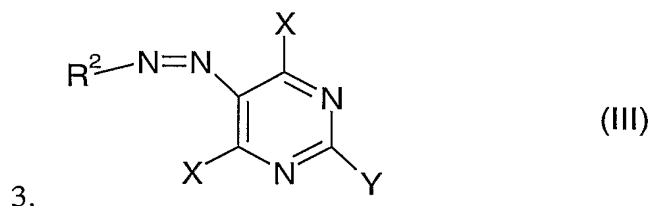
- 5 wherein X is halogen; Y is ZR¹; Z is oxygen or sulphur; and R¹ is C₁₋₆ alkyl, C₁₋₆ haloalkyl or C₃₋₇ cycloalkyl; the process comprising either:

- a. hydrogenating a compound of formula (II):



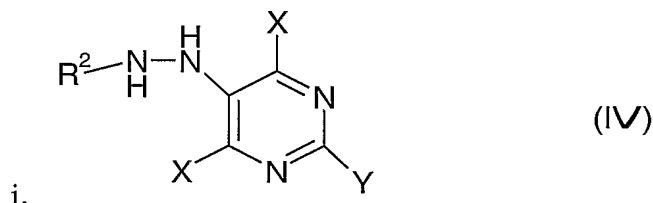
- 10 with a suitable transition metal catalyst in a C₁₋₆ aliphatic alcohol, an ether, an ester or a hydrocarbon as solvent;
or,

- b. conducting a one-pot hydrogenation of a compound of formula (III):



- 15 wherein R² is phenyl optionally substituted by chloro, C₁₋₆ alkyl, C₁₋₆ alkoxy or (C₁₋₆ alkyl)₂N;

- (i) firstly at about 20°C to form a compound of formula (IV):



- (ii) and then at about 40°C;

- 20 both steps (i) and (ii) being carried out in the presence of a suitable catalyst and in the presence of a suitable solvent.

2. A process as claimed in claim 1 wherein X is chloro.
3. A process as claimed in claim 1 or 2 wherein Z is sulphur.
4. A process as claimed in claim 1, 2 or 3 wherein R¹ is C₁₋₄ alkyl or C₁₋₄ haloalkyl.
5. A process as claimed in claim 1, 2, 3 or 4 wherein Y is ZR¹; Z is sulphur; and R¹ is
5 n-propyl.
6. A process as claimed in any one of claims 1 to 5 wherein the transition metal catalyst for the hydrogenation of a compound of formula (II) is selected from platinum, palladium and a combination of platinum with a transition metal selected from vanadium, iron and manganese.
- 10 7. A process as claimed claim 6 wherein the transition metal catalyst is on a carbon support.
8. A process as claimed in any one of claims 1 to 7 wherein the solvent for the hydrogenation of a compound of formula (II) is a C₁₋₆ aliphatic alcohol, an ether, an ester or a hydrocarbon solvent.
- 15 9. A process as claimed in any one of claims 1 to 8 wherein the hydrogenation of a compound of formula (II) is conducted at a temperature in the range 10 to 90°C. A process as claimed in claim 9 wherein the hydrogenation of a compound of formula (II) is conducted at a temperature in the range 20 to 40°C.
- 20 10. A process as claimed in any one of claims 1 to 10 wherein the hydrogenation of a compound of formula (II) is conducted at a pressure of 1 to 10 bar.
11. A process as claimed in claim 10 wherein the hydrogenation of a compound of formula (II) is conducted at a pressure of 2 to 4 bar.
12. A process as claimed in claim 1 for the preparation of a compound of formula (I) in which X is chloro, Y is ZR¹; Z is sulphur; and R¹ is n-propyl; the process
25 comprising hydrogenating a compound of formula (II) in solvent comprising an ether at a pressure of 2 to 4 bar, a temperature in the range 20 to 40°C and a Pt/V/C catalyst.
13. A process as claimed in any one of claims 1 to 5 wherein the catalyst for the one-pot hydrogenation is selected from platinum and a mixture of platinum and vanadium.
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14. A process as claimed in claim 13 wherein the catalyst for the one-pot hydrogenation is selected from platinum on carbon 5-15%w/w; platinum 2-10%w/w and vanadium 0.2-3%w/w on carbon.

15. A process as claimed in claim 12, 13 or 14 wherein the solvent for the one-pot hydrogenation is selected from a C₁₋₆ aliphatic alcohol, an ester, an ether, a hydrocarbon and a ketone.
- 5 16. A process as claimed in claim 13, 14 or 15 wherein the hydrogenation of a compound of formula (III) or (IV) is conducted at a pressure of 2 to 4 bar.
17. A process as claimed in claim 1 for the preparation of a compound of formula (I) in which X is chloro, Y is ZR¹; Z is sulphur; and R¹ is n-propyl ; the process comprising a one-pot hydrogenation of a compound of formula (III) wherein the
10 hydrogenation is conducted in a solvent of ethyl acetate at a pressure of 2 to 4 bar and using a Pt/C catalyst.